TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION Effective June 1, 2011
GDR-78 Revised August 1, 2011

*The following product has been evaluated for compliance with the wind loads specified in the **International Residential Code (IRC)** and the **International Building Code (IBC)**. This product shall be subject to reevaluation **December 2011**.*

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.

Series 170/180 Sectional Garage Doors, Non-Impact Resistant and Impact Resistant, as manufactured by:

Overhead Door Corporation
2501 S. State Hwy 121, Suite 200
Lewisville, TX 75067
(800) 275-3290

will be accepted for use in designated catastrophe areas along the Texas Gulf Coast when installed in accordance with this product evaluation. Design drawings, signed, sealed, and dated by Mark A. Sawicki, PE, and installation instructions shall be provided and available on the job site during installation.

PRODUCT DESCRIPTION

Series 170/180 doors are sectional overhead doors. The doors sections are constructed of ASTM A653-00 galvanized FS Type B steel. The galvanized steel sections have a two coat polyester finish. The door sections are 2-inch thick. The front panels are embossed with a textured surface. The panel joints are tongue and groove. Refer to Table 1 for series names and descriptions. Each door section is reinforced with 16 gauge box-shaped end stiles and 20 gauge box-shaped center stiles. This evaluation report includes both impact resistant and non-impact resistant doors. The door also has an option for a 1/2" non-structural decorative overlay.

Product Identification: The door has a warranty/warning label applied during manufacturing that includes the manufacturers name and the Series/Model number for the garage door. The door will also have a second label, applied by the installer, which includes the manufacturers name and the design pressure rating for the door.

LIMITATIONS

This evaluation report includes both non-impact resistant and impact resistant doors.

All non-impact resistant doors have the option to include glazing.

All impact resistant doors have the option to include impact-resistant glazing.

Non-impact doors have the option to include louvers in the bottom section.

All impact resistant doors do not include louvers.

The maximum height of each door section shall not exceed 21 inches.

The doors shall have a maximum width of 18 feet.

The doors shall have a maximum height of 14 feet. Refer to the tables in this evaluation report for allowable door heights for specific doors.

The doors are reinforced with either 18 gauge or 20 gauge steel U-bars, and in some cases, a vertical wind load post is required to obtain the design pressure rating. The placement and installation of the reinforcement and wind load post are shown on the design drawings.

Table 1
Model Series Numbers and Design

Section Type	Exterior Steel Thickness	Panel Design	Series Number
PAN	25ga	Short Panel	170
		Long Panel	171
		V12	172
	24ga	Short Panel	173
		Long Panel	174
		Flush	175
		V12	177
INSULATED	25ga	Short Panel, 1-5/8"Insul	180
		Long Panel, 1-5/8"Insul	181
		V12, 1-5/8"Insul	182
	24ga	Short Panel, 1-5/8"Insul	183
		Long Panel, 1-5/8"Insul	184
		Flush 1-5/8"Insul	185
		V12, 1-5/8"Insul	187

Non-Impact Resistant Doors

Design drawings: Specified in Table 2.

Allowable dimensions: Specified in Table 2.

Design pressures: Table 2.

Glazing (Optional): Glass is single strength (0.090” thick) annealed monolithic in molded frames. The glass units are screwed into the door sections with ten (10) No. 8 screws. The dimensions of the glass shall not exceed 10.69” width by 16.94” high.

Louvers: Minimum 0.040” thick aluminum louvers in molded frames fastened to the door panels with ten (10) No. 8 screws. The louver panels are installed in the end panels of the bottom section. The dimensions of the glass shall not exceed 10.69” width by 16.94” high.

Impact protection: These doors have not been tested for windborne debris resistance. Doors that contain glazing may not be installed in the Inland I zone without protection from an impact protective system. All doors (with and without glazing) that are installed in the Seaward zone will need to be protected with an impact protective system.

Table 2
Windload Drawing Number, Allowable Door Dimensions,
Glazing Options and Design Pressure Rating
Non-Impact Resistant Doors

Windload Drawing Number	Maximum Door Width	Maximum Door Height	Glass Option	Vertical Windload Post	Design Pressure (psf)
411040, Rev B, 2/21/11	9'-0"	14'-0"	Yes	No	+22.9, -26.3
411041, Rev B, 2/21/11	9'-0"	14'-0"	Yes	No	+26.9, -30.8
411042, Rev B, 2/21/11	9'-0"	14'-0"	Yes	No	+35.7, -41.0
411043, Rev B, 2/21/11	9'-0"	14'-0"	Yes	No	+46.0, -52.0
411046, Rev B, 2/21/11	16'-0"	14'-0"	Yes	No	+23.0, -25.0
411047, Rev B, 2/21/11	16'-0"	14'-0"	Yes	No	+30.0, -33.5
411048, Rev B, 2/21/11	16'-0"	14'-0"	Yes	No	+34.4, -38.3
411049, Rev B, 2/21/11	16'-0"	14'-0"	Yes	No	+46.0, -52.0
411052, Rev B, 2/18/11	18'-0"	14'-0"	Yes	No	+34.4, -38.3
411053, Rev B, 2/21/11	18'-0"	8'-0"	Yes	Yes	+34.4, -38.3
411054, Rev B, 2/21/11	18'-0"	8'-0"	Yes	Yes	+46.0, -52.0

Impact Resistant Doors

Design drawings: Specified in Table 3.

Allowable dimensions: Specified in Table 3.

Design pressures: Table 3.

Glazing (Optional): Glazing shall be minimum ¼" Makrolon-AR polycarbonate. Each glazing lite is secured to the door face steel with sixteen (16) minimum No. 8 x ¾" stainless steel screws with rubber washers. A ⅛" bead of GE Ultraglaze SSG4000AC structural sealant is applied between the door face steel and the glazing. The dimensions of the glazing shall not exceed 18.56" width by 12.56" high.

Louvers: Not permitted.

Impact protection: These door assemblies satisfy the Texas Department of Insurance criteria for protection from windborne debris in both the **Inland I zone** and the **Seaward zone**. The door assembly passed an impact standard equivalent to Missile Level D in ASTM E 1996-04. The door assembly may

be installed on the structure as long as the design pressure rating for the assembly is not exceeded. These door assemblies will not require protection with an impact protective system. **NOTE:** The louvers are not impact resistant. They may not be used on a door that is installed to resist windborne debris.

Table 3
Windload Specification Option Code, Allowable Door Dimensions,
Glazing Options and Design Pressure Rating
Impact Resistant Doors

Drawing Part No. & Windload Specification Option Code	Maximum Door Width	Maximum Door Height	Glass Option	Vertical Windload Post	Design Pressure (psf)
411043, Rev B, 2/21/11	9'-0"	14'-0"	Yes	No	+46.0, -52.0
411047, Rev B, 2/21/11	16'-0"	14'-0"	Yes	No	+30.0, -33.5
411048, Rev B, 2/21/11	16'-0"	14'-0"	Yes	No	+34.4, -38.3
411049, Rev B, 2/21/11	16'-0"	14'-0"	Yes	No	+46.0, -52.0
411052, Rev B, 2/21/11	18'-0"	14'-0"	Yes	No	+34.4, -38.3
411053, Rev B, 2/21/11	18'-0"	8'-0"	Yes	Yes	+34.4, -38.3
411054, Rev B, 2/21/11	18'-0"	8'-0"	Yes	Yes	+46.0, -52.0

INSTALLATION INSTRUCTIONS

Design Drawings: The doors shall be installed as specified on the design drawings. The design drawings shall be provided with the door. Each page of the design drawings shall be signed, sealed, and dated by Mark A. Sawicki, PE. The tables indicate the date the drawings were sealed.

In addition to providing the design drawings, the following documents shall be provided with the door:

- Jamb Connection Supplement, Drawing Number 411060, Revision REL, 6 pages (including cover), signed and sealed by Mark A Sawicki, P.E. on February 21, 2011.
- Windload Track Supplement, Drawing Number 411059, Revision Release, signed and sealed by Mark A Sawicki, P.E. on February 21, 2011.
- Jamb Connection Supplement, Drawing Number 411142, Revision Release, signed and sealed by Mark A Sawicki, P.E. on February 21, 2011.

Attachment of Doors to Wall (Use One of the Following Methods):
Attachment of Door Components to Wood-Framed Walls Using a Wood Jamb: Brackets for the vertical tracks and for the headplates of the door shall be attached directly to wood jambs with the fasteners specified on the design drawings. The wood jambs shall be minimum 2x6 No. 2 Spruce Pine (Specific Gravity = 0.42) lumber. The attachment of the 2x6 wood jambs to the wood-framed walls shall be as specified in Tables 4 and 5.

Attachment of Door Components to Concrete/Masonry Block Walls Using a Wood Jamb: Brackets for the vertical tracks and for the headplates of the door shall be attached directly to wood jambs with the fasteners specified on the design drawings. The wood jambs shall be minimum 2x6 No. 2 Spruce Pine

(Specific Gravity = 0.42) lumber. The attachment of the 2x6 wood jambs to the concrete wall shall be as specified in Table 6. The attachment of the 2x6 wood jambs to the concrete/masonry block wall shall be as specified in Table 7.

Attachment of Door Components to Wood-Framed Walls – Direct Attachment of Jamb Brackets: Brackets for the vertical tracks and for the headplates of the door shall be attached directly to wood jambs with the fasteners specified on the design drawings. The wood jambs shall be minimum 2x6 No. 2 Spruce Pine (Specific Gravity = 0.42) lumber. Refer to drawing Jamb Connection Supplement, Drawing Number 411142, for specific installation details.

Attachment of Door Components to Concrete Walls – Direct Attachment of Jamb Brackets: Brackets for the vertical tracks and for the flag angles of the door shall be attached directly to concrete wall framing using minimum $\frac{3}{8}$" Diameter Simpson Titen HD Screw Anchors. Minimum 2,000 psi concrete is required. The anchors shall have a minimum embedment into the concrete of $2\frac{3}{4}$ inches and a minimum edge distance of $2\frac{3}{4}$ inches. Refer to drawing Jamb Connection Supplement, Drawing Number 411142, for specific installation details.

Table 4
Attachment of 2x6 Wood Jambs to Wood Wall Framing
(Fastener: $\frac{3}{8}$" Diameter Lag Screws with $1\frac{1}{2}$" O.D. Washers)
(Maximum Fastener Spacing Per Jamb (in inches))

		Maximum Fastener Spacing (in.)		
		Substrate Framing Member Material		
Windload Specification Option Code	Maximum Door Width	Southern Yellow Pine	Douglas Fir-Larch	Spruce-Pine-Fir
411040	9'-0"	24	24	24
411041	9'-0"	24	24	24
411042	9'-0"	24	24	24
411043	9'-0"	24	24	21
411046	16'-0"	24	24	23
411047	16'-0"	24	22	19
411048	16'-0"	24	18	16
411049	16'-0"	18	13	12
411051	18'-0"	24	24	24
411052	18'-0"	21	16	14
411053	18'-0"	21	16	14
411054	18'-0"	16	12	11

1. Minimum thread embedment depth into wood framing of $1\frac{9}{32}$".
2. Provide the quantity of lag screws required to maintain maximum spacing with a minimum of three (3) lag screws per jamb.
3. A lag screw shall be located a maximum distance of 6 inches from each end of each jamb.
4. Minimum distance from any edge of wood (jamb or wall framing) shall be $1\frac{1}{2}$".
5. Holes shall be pre-drilled to prevent splitting.

INSTALLATION INSTRUCTIONS (Continued)

Table 5
Attachment of 2x6 Wood Jambs to Wood Wall Framing
(Fastener: 16d Common Wire Nails or 16d Threaded Hardened Steel Nails)
(Maximum Fastener Spacing Per Jamb (in inches))

		Maximum Fastener Spacing (in.)		
		Substrate Framing Member Material		
Windload Specification Option Code	Maximum Door Width	Southern Yellow Pine	Douglas Fir-Larch	Spruce-Pine-Fir
411040	9'-0"	24	19	15
411041	9'-0"	24	16	13
411042	9'-0"	19	12	9
411043	9'-0"	13	8	7
411046	16'-0"	17	10	8
411047	16'-0"	12	8	6
411048	16'-0"	10	7	5
411049	16'-0"	8	5	4
411051	18'-0"	17	10	8
411052	18'-0"	9	6	4
411053	18'-0"	9	6	4
411054	18'-0"	7	4	3

1. Nails shall be provided in pairs at the maximum spacing specified in the table.
2. Minimum embedment depth into wood framing of 2 inches.
3. Provide the quantity of nails required to maintain maximum spacing with a minimum of three (3) rows of nails per jamb.
4. A row of nails shall be located a maximum distance of 6 inches from each end of each jamb.
5. Minimum edge distance from any edge of wood (jamb or wall framing) shall be sufficient to prevent wood splitting.

Table 6
Attachment of 2x6 Wood Jambs to Concrete Wall
(Fastener: Minimum $\frac{3}{8}$" Diameter A307 Headed or Hooked Anchor Bolts with 2" O.D. Washers)
(Maximum Fastener Spacing Per Jamb (in inches))

		Maximum Fastener Spacing (in.)
Windload Specification Option Code	Maximum Door Width	Minimum 2,000 psi Concrete
411040, 411041, 411042, 411043	9'-0"	24
411046, 411047, 411048	16'-0"	24
411049	16'-0"	21
411051, 411052, 411053	18'-0"	24
411054	18'-0"	19

1. Based on minimum 2,000 psi concrete.
2. Minimum embedment depth of 3 inches into concrete.
3. Minimum distance from edge of concrete is 3 inches.
4. An anchor bolt shall be located a maximum distance of 6 inches from each end of each jamb.
5. Minimum distance from any edge of wood jamb shall be 1 $\frac{1}{2}$".

INSTALLATION INSTRUCTIONS (Continued)

Table 7
Attachment of 2x6 Wood Jamb to Concrete Wall or Grout-Filled Concrete Block Wall
(Fastener: 3/8" Diameter Simpson Titen HD Screw Anchors with 1 3/4" O.D. Washers)
(Maximum Fastener Spacing Per Jamb (in inches))

		Maximum Fastener Spacing (in.)	
Windload Specification Option Code	Maximum Door Width	Minimum 2,000 psi Concrete	Minimum 2,000 psi CMU
411040, 411041, 411042, 411043	9'-0"	24	24
411046, 411047, 411048	16'-0"	24	24
411049	16'-0"	24	18
411051, 411052	18'-0"	24	24
411053	18'-0"	24	22
411054	18'-0"	22	17

1. Based on minimum 2,000 psi concrete.
2. Minimum embedment depth of 2 3/4 inches into concrete.
3. Minimum distance from edge of concrete is 2 3/4 inches
4. Based on minimum 2,000 psi grout-filled concrete block.
5. Minimum embedment depth of 2 3/4 inches into grout-filled concrete block.
6. Minimum distance from edge of concrete block is 4 inches. Minimum end distance is 4 inches.
7. Provide the quantity of Titen HD screw anchors required to maintain maximum spacing with a minimum of three (3) Titen HD screw anchors per jamb.
8. A Titen HD screw anchor shall be located a maximum distance of 6 inches from each end of each jamb.
9. Minimum distance from any edge of wood jamb shall be 1 1/2".

Note: The manufacturer's installation instructions and the appropriate Windload Specification Option Code design drawings, signed, sealed, and dated by Mark A. Sawicki, PE, shall be available on the job site during installation. All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC), the International Building Code (IBC), and the Texas Revisions.